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Review

Childhood violence, exposure to parental violence and alcohol abuse in adulthood.

Violence in childhood and alcohol dependence and/or abuse.

**Daniela Viganó Zanoti-Jeronymo^I; Marcos Zaleski^{II}; Raul Caetano^{III}; Ilana Pinsky^{IV};
Neliana Buzi Figlie^{IV}; Ronaldo Laranjeira^{IV}.**

^IUniversidade Estadual do Centro Oeste (UNICENTRO), Guarapuava (PR), Brazil

^{II} Núcleo de Psiquiatria da Universidade Federal de Santa Catarina e Instituto de Psiquiatria de Santa Catarina, Florianópolis (SC), Brazil

^{III} Departamento de Psiquiatria, Universidade Federal de São Paulo, Unidade de Pesquisa em Álcool e Drogas – UNIAD, São Paulo (SP), Brazil

^{IV}Dallas Regional Campus, University of Texas School of Public Health, Dallas (TX), USA

Endereço: Daniela Viganó Zanoti Jeronymo

Rua Vicente Machado, nº. 1530, apto 402.

Bairro: Centro

CEP: 85010-260 Guarapuava – PR.

e-mail: danielazanoti@uol.com.br

ABSTRACT

Objective: This article analyzes the association between history of violence in childhood and alcohol abuse and dependence in adulthood. **Method:** A probabilistic, multi-stage sample was used to select 3,007 individuals aged 14 years or older, living in Brazil, between November 2005 and April 2006. **Results:** Analyses showed the existence of an association between history of physical abuse and exposure to parental violence ($p < 0.001$). A multinomial regression model showed a significant association between history of physical abuse in childhood and dependence on alcohol in adulthood. Variables having a greater impact on the probability of alcohol dependence were the following: male sex, exposure to parental violence and history of physical abuse. **Conclusions:** Thus, the higher the level of exposure, the greater the percentage of violence suffered in childhood. Results corroborate previous findings, which suggest that a positive history of violence in childhood is an important aspect in the etiology of disorders resulting from alcohol consumption.

Descriptors: Domestic violence; Abuse in childhood; Parental violence; Alcohol dependence and abuse; Cross-sectional studies.

RESUMO

Objetivo: Este artigo examina a associação entre o histórico de violência na infância e a dependência e uso nocivo de álcool na idade adulta. **Método:** Uma amostra probabilística multiestágio foi usada para selecionar 3.007 indivíduos de 14 anos de idade ou mais, dos lares brasileiros, entre novembro de 2005 e abril de 2006. **Resultados:** As análises mostraram a existência de associação entre o histórico de abuso físico e exposição à violência parental ($p < 0,001$). O modelo de regressão multinomial mostrou uma associação entre o histórico de violência na infância e a dependência de álcool na idade adulta. As variáveis de maior impacto na chance para dependência do álcool foram sexo masculino, exposição à violência

parental e histórico de abuso físico. **Conclusões:** Desta forma, observou-se que quanto maior o grau de exposição, maior a porcentagem de violência severa sofrida na infância. Os resultados corroboram com prévios achados que sugerem que um histórico positivo de violência na infância é um componente importante na etiologia dos transtornos decorrentes do consumo de álcool.

Descritores: Violência doméstica; Abuso na infância; Violência parental; Dependência e abuso de álcool; Estudos transversais.

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INTRODUCTION

Due to its high incidence and prevalence, domestic violence is recognized as an important public health problem worldwide^{1,2,3} and its consequences to mental and physical health have an impact on adulthood.^{4,5}

Evidence resulting from several studies supports the idea that victimization in childhood, due to physical abuse and witnessing of violence between parents, may lead to a high risk of development of physical health problems^{6,7} and high rates of psychiatric disorders in adulthood, such as depression, anxiety and abuse of substances.^{4-6,8,9}

As regards the use of substances, especially the alcohol abuse and/or dependence, previous studies point to experiences of violence in childhood as a risk factor for the development of alcohol-related disorders,^{10,11} whereas others are more incisive and report that such experiences are an important aspect in the etiology of alcohol use disorders.¹²⁻¹⁴

Evidence proves that physical abuse and exposure to parental violence tend to occur together, thus indicating that these experiences are not isolated events in the life of individuals with a history of violence in childhood.¹⁵⁻¹⁷ Thus, the accumulation of these two types of experiences, physical abuse and exposure to parental violence, may have negative results in the short and long terms, leading to higher risk of development of behavioral problems.^{7,17-19}

This association has been reported in several studies performed in different countries.^{12-14,20,21} However, compared to studies performed in developed countries, the Brazilian scientific production is small as regards the verification of association between history of violence in childhood and alcohol use disorders. Thus, the present study aimed to assess the effects of physical abuse and exposure to parental violence in childhood on the risk of development of alcohol dependence and abuse in adulthood, in a representative sample of the Brazilian population.

METHODS

Sampling process and data collection

The present study analyzed data from the 1st Brazilian Nationwide Survey on Alcohol Consumption Patterns,²² conducted by the Research Unit on Alcohol and Drugs (UNIAD) of the Universidade Federal de São Paulo (UNIFESP).

Data were collected between November 2005 and April 2006 in 143 Brazilian cities, totaling 325 census tracts, using the methodology of stratified probabilistic sample in three stages: Stage 1: Systematic random selection of cities, probabilistically selected by Probability Proportional to Size (PPS) and based on the population of each city. Stage 2: selection of two census tracts for each city, except for the 14 larger cities selected, totaling 325 census tracts, also using PPS. Stage 3: in each tract, eight households were selected by simple random sampling, followed by the selection of a household resident, who was subsequently interviewed using the “technique of the individual whose birthday comes next”, beginning with the date when the household was listed.

The sampling methodology was designed to cover Brazil as a whole, representing the entire Brazilian population aged 14 years or more, of both sexes, and without the exclusion of any part of the country, including rural areas. Special populations such as Brazilian Indians, army officers and those living in institutions such as prisons were not included in the sample.

The sample was comprised of 2,522 interviews with participants aged 14 years or more, in addition to an extra quota of 485 interviews, which was exclusive for the population aged between 14 and 17 years, totaling 3,007 interviews. A face-to-face interview lasting one hour was conducted by qualified interviewers in the respondent's home, who used a standardized, close-ended questionnaire. Response rate was 66.4%. Refusal was higher among individuals with high socioeconomic level.

All respondents signed an Informed Consent Form referring to the original study,

which was approved by a human subjects/internal review board process at the university. For a detailed discussion on the sampling methods and other methodological issues related to the present survey, refer to Laranjeira.²²

Measurements

The instrument used to collect data from the 1st Brazilian Nationwide Survey on Alcohol Consumption Patterns was a version of the questionnaire employed by the Hispanic Americans Baseline Alcohol Survey – HABLAS.²³ This questionnaire was translated by research coordinators and it underwent a process of adaptation to the socio-cultural reality of the Brazilian population. The complete version of the questionnaire in Portuguese can be found at www.uniad.org.br.

1) History of violence

HABLAS items used to assess physical abuse in childhood were adapted from the Conflict Tactics Scales - CTS, Form R,²⁴ and Revised Conflict Tactics Scales - CTS2.²⁵ In this way, the present study restricts the term “abuse” to intra-family physical abuse, characterized by the parents’ and/or caretakers’ use of physical force against children and adolescents and to parental violence, also characterized by the use of physical force, aiming to cause harm to intimate partner, according to criteria from Straus & Gelles.²⁶

Physical abuse in childhood: Respondents were asked whether parents or adults who raised them during their childhood and/or adolescence had ever: beaten them with an object, burned or scalded them, threatened them with a knife or fire arm, or used a knife or fire arm against them. Based on their responses, individuals were divided into three groups: without history of physical abuse in childhood, moderate physical abuse (interviewee had been beaten), or severe physical abuse in childhood (interviewee had been beaten with an object, burned or scalded, threatened with a knife or fire arm, or hurt by a knife or firearm).

Exposure to parental violence in childhood: Respondents were asked whether, in their

childhood or adolescence, they had witnessed their parents or those who raised them threaten each other with physical violence or actually commit physical violence against each other. Based on their responses, individuals were divided into three groups: without exposure to parental violence (never observed a threat of violence or actual physical violence between parents), moderate exposure to parental violence (witnessed threat of violence between parents) and severe exposure to parental violence (witnessed both threat of and actual physical violence between parents).

2) *Alcohol dependence and abuse*

Data to verify alcohol abuse or dependence were obtained from questions of the “Composite International Diagnostic Interview-Substance” (CIDISAM).²⁷ Symptoms present in the last 12 months were observed to assess time of occurrence. In this way, the terms “abuse” and “dependence” are understood as follows:

Abuse: When there was a positive response to at least one of the six CIDI questions about alcohol abuse;

Dependence: When there was a positive response to at least three of the seven CIDI questions about dependence.

3) *Socio-demographic variables*:

The variables used were: *Sex* (male or female); *Age* (constantly assessed in years and divided into eight categories, varying from 14-19 years to 80 years or more); *Ethnic group* (self-referred as white, black, mixed or others); *Marital status* (categorized into single, married or cohabitating, widowed, separated and divorced); *Educational level* (classified according to the highest level obtained or completed school year and divided into four categories, varying between “from illiterate to fourth grade of elementary school” and “undergraduate university level or higher”); *Household income* (total monthly household income was recorded, varying from “up to R\$ 450.00” to “more than R\$ 2,500.00 - R\$ 1.00

was equivalent to about US\$ 0.50 at the time of this study); *Employment status* (divided into two categories: unemployed and employed; in addition, a third category was added for women: housewife); *Geographical region of the country*: Northern, Northeastern, Mid-Western, Southeastern and Southern Brazil.

Statistical analysis

Analyses were performed using the SPSS software, version 13.0. Descriptive analyses were made for sample characterization and distribution of history of violence in childhood and alcohol use disorders. Next, Pearson chi-square test was used to establish an association between the occurrence of history of physical abuse and exposure to parental violence in childhood with a diagnosis of alcohol abuse or dependence. A multinomial regression model was used. First, the following variables were included as explanatory variables: sex, age, marital status, household income, geographical region, ethnic group, employment status, exposure to violence in childhood and history of violence in childhood. Variables that were not significant at a 5% level were excluded from the model one by one (backward method). The complex structure of the sampling plan was considered in all analyses, using SPSS Complex Samples.

Ethical considerations

The study was approved by a human subjects/internal review board process at the university (code: CEP 1672/04). All respondents signed an informed consent form and were assured of the confidential nature of the study before the interview.

RESULTS

Characteristics of the sample studied

The study population included 1,285 men (47.9%) and 1,722 women (52.10%). Mean age was 36.84 years for men and 38.01 for women (varying between 14 and 91 years). Half of

the individuals were white (men= 51.4%, women= 49.7%), 35.2% were mixed (men= 34.7%, women= 35.6%), 11.3% were black (men= 10.9%, women= 11.7%) and 3% belonged to other ethnic groups. As regards marital status, 55.4% were married or cohabitating (a) (men= 58.2%, women= 52.8%). Approximately 34% of individuals showed low levels of education (men= 34.2%, women= 33.9%), of which 23% had never been to school or had only completed the first grades of elementary school. In terms of employment status, 70.5% of individuals performed a certain type of paid activity (men= 83.2%, women= 58.7%). In addition, among women, 25% reported being housewives. About two fifths of the sample (39.1%) reported their monthly household income was up to R\$ 450.00.

The sample included individuals from all Brazilian regions, thus showing national representativeness. These results have also been reported by Zanoti-Jeronymo *et al.*¹⁵.

Prevalence of history of violence in childhood

According to data from Table 1, 44.1% of individuals in the sample studied reported a positive history of physical abuse in childhood (men= 45.5%, women= 42.8%). Of these, 33.8% (men= 35.8%, women= 32.0%) reported moderate physical abuse and 10.3% (men= 9.7%, women= 10.8%) reported severe physical abuse. The prevalence of exposure to parental violence in childhood was 26.1% (men= 24.1%, women= 27.9%), of which 7.5% witnessed moderate parental violence (men= 8.3%, women= 6.7%) and 18.6% witnessed severe parental violence (men= 15.8%, women= 21.2%).

There was a strong association between exposure to parental violence and history of physical abuse in childhood (Table 2). Thus, among individuals without a history of exposure to parental violence, the percentage of individuals who had suffered a certain form of violence (“moderate physical abuse” or “severe physical abuse”) did not surpass 40%, both in men and women. In contrast, among individuals who had already had some form of exposure, this percentage was much higher (more than 55%). Likewise, both men (42.5%) and women

(58.0%) with a history of severe physical abuse tend to have been more exposed to severe parental violence in childhood (table not shown).

Prevalence of alcohol use disorders

Prevalence of alcohol dependence was 8.2% in the sample (men=13.1%, women=3.6%). Thus, men tended to show more alcohol dependence than women ($p < 0.0001$). In terms of alcohol abuse, a prevalence of 2.9% was found (men= 4.9%, women= 1%).

Association between history of violence in childhood and alcohol dependence and abuse in adulthood

Table 3 shows the prevalences of disorders associated with alcohol use, as regards violence in childhood and exposure to parental violence. Analyses showed higher occurrence of the diagnosis of alcohol dependence (men= 21.3%, women= 10.8%) among individuals who had a positive history of physical abuse in childhood, when compared to other situations (without alcohol dependence or abuse). In this way, alcohol dependence became more prevalent among men, according to the level of violence suffered: none (9.6%), moderate physical abuse (16.3%) and severe physical violence (21.3%) in childhood. In contrast, among women, prevalences of no abuse (2.9%) and moderate physical abuse (2.5%) were similar and lower than that of severe physical violence (10.8%).

Men showed similar distributions of exposure, according to alcohol abuse and dependence, without significant differences among groups ($p=0.2164$). On the other hand, there was a higher percentage of women with dependence among those who had witnessed moderate parental violence and an even higher percentage among those who had witnessed severe parental violence (6.7% and 8.5%, respectively).

Results of multinomial regression

Table 4 shows the variables that remained in the final model of multinomial regression. Analyses of results revealed that, in terms of probability of being dependent on

alcohol in relation to the reference group (without dependence/without abuse), variables with a greater impact were sex, exposure to parental violence and history of violence, in this order. Thus, the probability of being dependent on alcohol, when compared to without dependence/without abuse, was 4.79 times higher (95% CI= [3.12;7.35]) in men than women, while controlling for the remaining characteristics.

In addition, the fact that this probability was 1.96 times higher (95% CI=[1.29;3.00]) among those who had been exposed to severe parental violence than others who had never been exposed to such violence or who had only been exposed to threats of parental violence in childhood should be emphasized.

The fact of having suffered severe physical abuse also showed a similar probability (1.91 – 95% CI=[1.15;3.17]), when compared to those who had not suffered physical abuse or had suffered moderate physical abuse in childhood. Moreover, the probability of being dependent on alcohol (in relation to without dependence/without abuse) was 44% lower (odds ratio of 0.56 – 95% CI=[0.40;0.79]) among married individuals, when compared to other marital status groups. Finally, this probability was 85% higher (odds ratio of 1.85 – 95% CI=[1.24;2.75]) among white individuals, when compared to black ones.

In the analyses of alcohol abuse, none of the variables (ethnic group, marital status, exposure to violence) reached a 5% significance level, except for sex, where the probability of abuse in men was six times higher than that of women (95 CI%=[3.27;11.17]).

DISCUSSION

The present study analyzed the effect of physical abuse and exposure to parental violence in childhood on the development of disorders associated with alcohol use (alcohol abuse and/or dependence) later on in adulthood, in a national sample representative of the Brazilian population.

The prevalence of physical abuse and exposure to parental violence in childhood was similar to those reported by studies with samples that are representative of the general population of other countries.^{9,28-30}

The two types of violence in childhood assessed by the present study were significantly associated with each other. If an individual had a history of physical abuse, their probability of having been exposed to parental violence in childhood was 2.2 times higher than the probability of those who did not report any physical abuse (16.8% of individuals who did not suffer any physical violence had been exposed to parental violence in childhood, while 38% of those who had a history of violence had been exposed to parental violence in childhood). These associations were statistically significant for each of the types of violence studied. More than half of participants (53.4%) had suffered physical abuse in childhood or been exposed to parental violence. Thus, the double history of violence in childhood, i.e. physical abuse and exposure to parental violence, was very frequent in the study population. These results corroborate other studies that reported the co-occurrence of both types of violence.^{7,17-19,31}

As regards alcohol use disorders, the rates found for alcohol abuse and/or dependence are in agreement with other Brazilian studies that used different methodologies.^{32,33}

After adjustment for all variables in the model, the current investigation found that individuals with a history of violence in childhood, when compared to those without a history of violence in childhood, had higher probabilities of experiencing alcohol abuse and/or dependence in adulthood. More specifically, individuals who had been exposed to parental violence in childhood (controlled for socio-demographic variables) were found to be 1.95 times more likely to show alcohol dependence than those who had not been exposed to this type of violence. In addition, those who had suffered severe physical abuse (controlled for socio-demographic variables) were almost 1.91 times more likely to show alcohol

dependence, compared to those who had not been physically abused. The strong relation between history of violence and disorders related to the subsequent alcohol use, found in individuals of the sample, was similar to that found in other studies.^{10,12,34}

Moreover, the multinomial regression analysis found that, among men, physical abuse in childhood was what most affected the probability of developing alcohol dependence, while, among women, it was the exposure to parental violence in childhood. Thus, by observing the effect of severe physical abuse, the probability of dependence in men is about two times higher than that of those who had not suffered any violence. In contrast, the effect of “exposure to moderate or severe parental violence” on the probability of alcohol dependence in women is about three times higher than that of others who had not been exposed.

In this way, the results of the present study confirm that experiences of physical abuse in childhood and exposure to parental violence between parents are risk factors for the development of subsequent problems in life, in this particular case, problems of alcohol use.

Although results suggest that physical abuse in childhood was associated with higher probability of alcohol dependence in adulthood, they do not clarify why violence suffered in childhood would result in adverse effects in adulthood. Further research is necessary to determine whether there are differences in the effects of physical abuse and exposure to parental violence in childhood on the development of alcohol dependence in women and men and how this occurs.

To do so, other types of violence that may co-occur in domestically violent families, such as psychological and sexual abuse and/or parental negligence, should be included. It is possible that growing up in a violent environment in childhood could result in exposures to other risks of mental and physical health. Future studies investigating these potential paths in more detail with longitudinal data may be useful, thus assessing the cumulative impact of multiple exposures.

There are certain limitations to the present study, which should be considered when interpreting the results. It is not possible to determine the causal relation between history of violence in childhood and alcohol use disorders in adulthood, due to the cross-sectional design of this study. Only the fact that there is an association between these two events could be determined. Beyond this, data are retrospective and exclusively based on participants' self-reports, which may lead to memory or reporting bias.

Despite these limitations, this is the first study that analyzed the association between physical violence/exposure to parental violence in childhood and the development of alcohol use disorders in adulthood with a representative sample of the Brazilian population aged 14 years or older, of both sexes, and without excluding any Brazilian region (except for those mentioned in the methodology section). The present investigation followed the standards of international probabilistic studies, prioritizing a methodological strictness that resulted in data of high reliability, confirmed by the absence of selection bias, measurements adequate for the proposed goals and intense quality control in all research stages.

The present study showed that there is an association between the occurrence of physical abuse and exposure to parental violence in childhood, as reported by adults. Future studies should investigate why certain individuals who experience violence in childhood subsequently develop alcohol use disorders in life, seeking to identify possible risk and protective factors for the association of such events.

Finally, the results found could have important implications for prevention and intervention, as they warn health professionals about the connection between history of violence in childhood and alcohol use disorders in adulthood. Thus, both investigators and clinicians must include physical abuse and exposure to parental violence in the assessment, once these findings can help to implement preventive strategies and intervention programs aimed at the population with alcohol use disorders.

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Table 1. Prevalence of physical abuse and exposure to parental violence in childhood.

	Sex		
	Male	Female	Total
History of violence in childhood	100,00%	100,00%	100,00%
No abuse	54,50%	57,10%	55,90%
Moderate physical abuse	35,80%	32,00%	33,80%
Severe physical abuse	9,70%	10,80%	10,30%
Exposure to parental violence	100,00%	100,00%	100,00%
Without exposure to parental violence	75,90%	72,00%	73,90%
Moderate exposure to parental violence	8,30%	6,70%	7,50%
Severe exposure to parental violence	15,80%	21,20%	18,60%

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Table 2. Association between parental violence and physical abuse in childhood.

Características	Relative frequency							
	Male				Female			
	No abuse	Moderate physical abuse	Severe physical abuse	Total	No abuse	Moderate physical abuse	Severe physical abuse	Total
Exposure to parental violence	54,70%	35,50%	9,80%	100,00%	57,10%	32,10%	10,90%	100,00%
Without exposure to parental violence	62,00%	33,00%	5,10%	100,00%	64,10%	30,70%	5,10%	100,00%
Moderate exposure to parental violence	30,10%	48,60%	21,30%	100,00%	44,40%	42,50%	13,10%	100,00%
Severe physical abuse	32,60%	41,00%	26,40%	100,00%	37,10%	33,30%	29,60%	100,00%
$p^1 < 0,0001$								
$p^2 < 0,0001$								

Table 3. Association between exposure to parental violence and physical abuse in childhood and harmful alcohol use or dependence in adulthood.

Characteristics	Male				Female			
	Without abuse and/or dependence	Alcohol abuse	Alcohol dependence	Total	Without abuse and/or dependence	Alcohol abuse	Alcohol dependence	Total
N	1.071	62	143	1.276	1.635	20	62	1.717
Exposure to parental violence								
Without exposure to parental violence	82,20%	4,90%	12,90%	100,00%	95,40%	1,00%	3,60%	100,00%
Moderate exposure to parental violence	83,50%	4,60%	11,90%	100,00%	97,00%	1,10%	1,90%	100,00%
Severe exposure to parental violence	82,10%	6,90%	11,00%	100,00%	93,30%		6,70%	100,00%
$p^1 = 0,2164$ $p^2 < 0,0001$	75,80%	5,40%	18,80%	100,00%	90,70%	0,70%	8,50%	100,00%
History of violence in childhood								
No abuse	82,00%	4,90%	13,10%	100,00%	95,40%	1,00%	3,60%	100,00%
Moderate physical abuse	85,00%	5,40%	9,60%	100,00%	96,20%	1,00%	2,90%	100,00%
Severe physical abuse	79,00%	4,80%	16,30%	100,00%	96,50%	1,00%	2,50%	100,00%
$p^1 = 0,0063$ $p^2 = 0,0005$	75,80%	3,00%	21,30%	100,00%	88,00%	1,10%	10,80%	100,00%

Table 4. Variables with the highest impact on the determination of alcohol abuse or dependence in adulthood.

Characteristics	Estimate	Std. Error	t	p-value	Odds Ratio
Alcohol dependence					
Sex					
Male	1,566	0,217	7,210	< 0,001	4,79
Female	-				1,00
Marital status					
Married	-0,578	0,171	-3,370	0,001	0,56
Others	-				1,00
Ethnic group					
Non-white	0,614	0,202	3,040	0,003	1,85
White	-				1,00
Exposure to parental violence					
Exposure to severe violence	0,675	0,214	3,150	0,002	1,96
Without exposure/ Exposure to moderate violence	-				1,00
Physical abuse					
Severe physical abuse	0,647	0,257	2,520	0,013	1,91
No abuse/moderate physical abuse	-				1,00
_cons	-3,655	0,268	-13,650	0,000	0,03
Alcohol abuse					
Sex					
Male	1,799	0,311	5,790	< 0,001	6,04
Female	-				1,00
Marital status					
Married	-0,105	0,290	-0,360	0,717	0,90
Others	-				1,00
Ethnic group					
Non-white	0,255	0,272	0,940	0,349	1,29
White	-				1,00
Exposure to parental violence					
Exposure to severe violence	0,187	0,413	0,450	0,651	1,21
Without exposure/ Exposure to moderate violence	-				1,00
Physical abuse					
Severe physical abuse	-0,321	0,502	-0,640	0,523	0,73
No abuse/moderate physical abuse	-				1,00
_cons	-4,673	0,390	-11,970	0,000	0,01